

EDWARDS (W.A.)

LITTORAL CALIFORNIA.

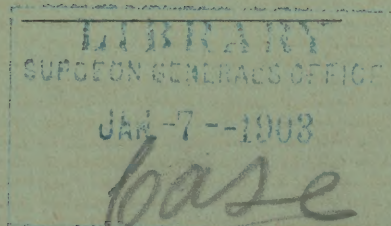
BY

WILLIAM A. EDWARDS, M. D.,

of Coronado, Cal.

Fellow of the College of Physicians of Philadelphia and Physician to the

Coronado, California, Hospital.



REPRINTED FROM
THE PHILADELPHIA MEDICAL JOURNAL,
PHILADELPHIA.

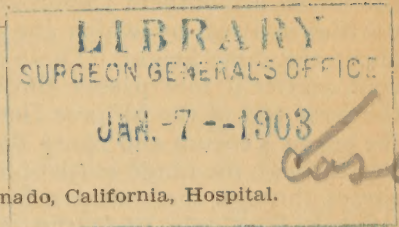
LITTORAL CALIFORNIA.*

By

WILLIAM A. EDWARDS, M. D.,

of Coronado, Cal.

Fellow of the College of Physicians of Philadelphia and Physician to the Coronado, California, Hospital.



Some confusion arises from the fact that strangers infer that the coast climate of Southern California is one common to the whole vast State line, with but little variation. This, however, is not the case; as a fact, there are three distinct climates on the coast and another, a fourth, on the great inland plain.

We shall barely mention the northern climatic belt, the center of which is at the transverse junction of the mountain chain near the northern border of California and which embraces also the country known as Oregon, Washington, British Columbia, the coast of Alaska and its islands. The central climatic subdivision extends from a point below the northward junction of the mountain chain just described to Point Conception on the coast. It is about here that the mountain chains transversely separate the State, and we are able to describe a northern and a southern California, each with its distinct topography and its very distinct climatic conditions.

Southern California, then, embraces as far as a study of its climate is concerned, all that part of the State below the transverse high mountains about Point Conception. It is with this strip of coast that the present communication is alone concerned; that is, from Point Conception to Coronado. At Point Conception the coast line changes its general direction and runs nearly east, the mountains also run eastward for sufficient distance to protect the country from the north, when they again turn south, offering another protection from the deserts which are east of them.

The trend of the coast and the arrangement of the mountains is the keynote of the charming climate offered by the coast of California of the South. The curve in the coast separates the Alaskan current from the land and the great Japan current, the

Kurosiwo, leaves the land at Point Conception and never returns. The coast islands from San Miguel to Coronado Islands and further south off the coast of Baja California (Mexico) materially assist in this separation.

In order more fully to understand the factors that make the coast climate so delightful, we must for a moment consider the formation of the country contiguous to the coast of Southern California. The general topography of California, more marked in the north, is a double mountain range parallel with the long axis of the State, with large fertile plains and valleys included between them.

In the south this general plan is somewhat modified. While the eastern range, the Sierras, wall the country from the great arid desert plains, the coast range is much lower and no longer shuts out the sea, indeed at some points the whole interior is quite open to the sea, so that the Santa Clara Valley, the valley of the San Buenaventura River, the San Fernando Valley, the San Gabriel Valley, the valley of the Santa Ana River, the San Jacinto River, the Los Angeles River and plains and the San Diego country become a great open coast land backed and protected by the high Sierras.

A newcomer from the eastern country will be somewhat surprised at the designation of plains as applied to these valleys, and he will also be somewhat disappointed at their size; the first effect will probably be one of smallness and narrowness as compared with his homeland valleys, but their size is greatly increased by the hilly uplands into which they insensibly merge; this is most noticeable in the great upland plain of the San Jacinto, south toward San Diego.

As Lindley and Widney say "The Sierra, which north of the Mojave Desert makes a great curve westward around the south end of the San Joaquin plain of the central belt, turns southward again opposite Santa Barbara and Ventura counties and, doubling back upon its course, walls in the west end of the desert, then turning directly eastward, separates the desert from the Los Angeles and San Bernardino plains. Turning southward again, it stands as a wall between the Colorado desert and that portion of Southern California lying west of its base." The range varies in height from five to seven thousand feet.

Unlike the northern and central portion of this chain it breaks down in the south, at several points, into low passes between the coast and the interior.

The tables and statistics in this paper were prepared by Mr. Ford A. Carpenter, the very competent and courteous official in charge of the weather-bureau in San Diego. As he says, there are few places in the United States with a more complete climatic record than San Diego. This station was prominent among the selected few that telegraphed to Washington the first simultaneous observation November 1st., 1871. In addition to being among the favored ones of the regular weather-service, San Diego has an uninterrupted temperature and rainfall record extending back for half a century. This station was also among the first to be completely equipped with self-recording apparatus. San Diego has had a continuous automatic record of temperature, rainfall, wind velocity, wind direction and sunshine for each moment of time, thus giving data that are absolutely reliable. It is on account of my familiarity with the excellent records of this station that San Diego and Coronado are selected as the type in this paper, but the statements and deductions apply almost equally to the coast of Southern California.

Read before the American Climatological Association, May 9, 10, 11 and 12, at Los Angeles, California.

"The pass by which the Central Pacific crosses the Sierra is 7017 feet in elevation. Yet the Soledad Pass, by which the Southern Pacific crosses the Sierra in Southern California, is only 2822 feet; the Cajon Pass, by which the Santa Fé enters, is about the same height. There are numerous other comparatively low passes through the Sierras at the west end of the Mojave Desert, leading toward the sea in Ventura and Santa Barbara counties, and also through the range south of San Geronio. These passes through the southern Sierra have a marked influence not only upon the climate of the coast portion of Southern California but also upon that of the deserts lying at the base of the Sierra."

This, then, is the wide expanse of country that we must study when we are considering the climatic peculiarities of the coast of Southern California,

Rainfall.—The wet and the dry seasons are not hard-and-fast divisions of time. The first rain may occur in early October or middle November, or it may not come until December; it is usually over by

April, so that December, January and February have the heaviest fall.

The average coast rainfall for two of the coast cities, Santa Barbara and San Diego, is illustrated by the following table from the government records, covering a period of twenty-four and forty-two years respectively. Each rainy season is a rule unto

Rain	November	December	January	February	March	April	May to October	Length of record
Santa Barbara	1.6	3.9	3.7	3.8	2.1	1.4	1.3	Twenty-four years.
San Diego . .	1.0	2.1	1.6	2.1	1.0	1.0	1.0	Forty-two years.

itself. It may be one of constantly recurring rains day after day until, as I have seen it, seven inches have fallen in a month, or the rains may be light, interspersed with a long period of almost constant



Chart of Seasonal Rainfall of San Diego, California.

sunshine. While, of course, the records shown are valuable, still they do not help us at all to predict for future rain probabilities. The last several years have been those of very deficient rainfall, indeed very far below the average determined by the government records for many years preceding. This, however, is not altogether unusual, as San Diego, for example, with a normal rainfall of about ten inches (9.58) has had a minimum of 3.02 (1863) and a maximum of 27.59 (1884).

The coast fog, about which so much has been written, is most frequent during the months of April, May and June. The fog bank usually rolls in about nightfall and disappears a few hours after sunrise. About nine o'clock in the morning the coast is usually free from fog. During these months there are a few days, however, when the fog is more persistent and a fine mist lasts until half-past twelve or one o'clock; but this happens only perhaps on a half-dozen days in the year.

In the table below will be found the following data: "A"—Greatest monthly precipitation and date. "B"—Least monthly precipitation and date. "C"—Number of times monthly precipitation has exceeded the normal for fifty-two years.

Table "A"	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Year . . .	1895	1884	1867	1878	1884	1850	1865	1873	1861	1889	1860	1889
Amount . .	7.33	9.05	7.88	2.91	2.17	0.68	1.29	1.95	1.59	2.12	2.88	7.71
Table "B"	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Year . . .	†1850	†1885	†1857	†1864	†1850	†1852	†1850	†1850	†1853	†1872	1900	
Amount . .	0	0.02	0	0.01	0	0	0	0	0	0	0	0
Table "C"	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total . .	17	18	21	18	16	11	8	10	7	15	21	16

† Also in other years.

Total number of days on which precipitation has fallen since November 1, 1871.

	January	February	March	April	May	June	July	August	September	October	November	December
Less than 0.01	19	22	42	17	44	18	11	17	15	26	15	22
0.01 to 0.10	74	72	83	58	80	31	4	10	15	38	43	64
0.11 to 0.25	33	34	33	36	8	3	0	1	2	24	20	35
0.26 to 0.50	38	20	43	16	8	0	0	2	1	3	16	30
0.51 to 1.00	20	22	21	10	5	0	0	0	0	4	10	20
Over 1.00 inch	14	11	5	1	2	0	1	0	0	1	2	13

No snow is reported to have fallen at San Diego since the beginning of the record of observations in 1850.

Maximum rate of rainfall from recording rain-gauge; record since 1893: December 28, 1896, in 1 minute, 0.19; in 5 minutes, 0.32; in 10 minutes, 0.47; in 1 hour, 0.79.

Greatest precipitation in 24 hours for each month.

YEAR	January	February	March	April	May	June	July	August	September	October	November	December	Greatest Annual
1872 . . .	0.53	1.12	0.29	0.15	0.10	0.00	0.00	0.09	0.00	0.00	0.00	0.53	1.12
1873 . . .	0.20	1.25	0.05	0.10	0.02	0.00	0.00	1.80	0.00	0.00	0.34	2.52	1.80
1874 . . .	1.35	1.24	0.28	0.33	0.21	0.00	0.09	0.00	0.10	0.18	0.31	0.55	1.35
1875 . . .	0.95	0.35	0.30	0.11	0.08	0.02	0.00	0.21	0.29	0.00	0.52	0.32	0.95
1876 . . .	0.35	1.53	0.80	0.05	0.05	0.05	0.03	0.06	0.03	0.06	0.03	0.10	1.53
1877 . . .	0.41	0.18	0.52	0.16	0.20	0.00	0.00	0.00	0.00	0.78	0.06	1.09	1.09
1878 . . .	0.55	1.11	0.36	0.82	0.28	0.07	0.00	0.00	0.00	0.96	0.00	0.58	0.96
1879 . . .	1.53	0.80	0.05	0.17	0.00	0.07	0.00	0.00	0.00	0.16	2.75	2.55	2.75
1880 . . .	0.31	0.82	0.44	0.38	0.06	0.06	0.07	0.28	0.00	0.48	0.17	1.29	1.29
1881 . . .	0.29	0.18	0.83	0.70	0.02	0.05	0.00	0.01	0.04	0.21	0.07	0.19	0.83
1882 . . .	2.94	0.99	0.55	0.13	0.17	0.05	0.00	0.00	0.01	0.21	0.31	0.11	2.94
1883 . . .	0.98	0.43	0.19	0.18	0.69	0.08	0.00	0.00	0.00	1.82	0.20	0.63	1.82
1884 . . .	0.92	1.89	1.71	1.01	1.45	0.24	0.00	T	0.07	0.23	0.10	1.66	1.89
1885 . . .	0.20	0.01	0.56	0.80	0.54	0.04	T	0.13	0.00	0.21	0.59	0.48	0.80
1886 . . .	1.76	0.60	1.38	1.20	0.02	0.04	T	T	0.00	0.05	0.74	0.06	1.76
1887 . . .	0.04	1.95	0.02	0.94	0.44	0.04	0.01	T	T	T	1.80	0.74	1.95
1888 . . .	0.75	0.60	1.25	0.08	0.15	0.04	0.01	T	0.04	0.20	0.60	1.04	1.25
1889 . . .	0.67	0.95	1.16	0.14	0.02	0.10	T	0.04	T	1.54	0.08	2.31	2.31
1890 . . .	1.32	1.04	0.35	0.03	0.04	0.00	0.00	T	0.37	0.01	0.72	1.23	1.32
1891 . . .	1.08	1.35	0.17	0.55	0.34	0.05	T	0.00	0.08	0.02	0.09	0.69	1.35
1892 . . .	1.25	1.25	0.34	0.41	0.95	0.13	0.00	0.04	T	0.10	0.82	0.43	1.25
1893 . . .	0.45	0.43	2.00	0.22	0.22	T	T	0.00	0.00	0.11	0.81	0.74	2.00
1894 . . .	0.20	0.15	0.65	0.06	0.08	0.01	0.00	0.04	0.01	T	0.00	0.59	0.65
1895 . . .	2.15	0.29	0.70	0.08	0.15	0.00	0.00	0.00	0.01	0.22	0.46	0.15	2.15
1896 . . .	0.57	0.02	1.32	0.12	0.03	0.01	T	0.09	T	0.64	0.88	1.10	1.32
1897 . . .	1.62	1.04	0.55	0.02	0.04	T	0.01	T	T	0.67	0.02	0.17	1.62
1898 . . .	0.55	0.06	0.47	0.09	0.26	0.02	0.00	0.00	0.06	0.00	0.11	0.71	0.71
1899 . . .	1.33	0.24	0.52	0.28	0.07	0.25	0.00	0.07	0.00	0.20	0.42	0.54	1.33
1900 . . .	0.66	0.03	0.48	0.79	1.35	0.05	0.00	T	T	0.20	0.52	0.00	1.35
1901 . . .	0.74	2.39	0.53	0.01	0.52	0.02	T	T	0.06	0.22	0.41	0.01	2.39
1902 . . .	0.54	1.16	0.40	0.20	0.05	T							

Dates when precipitation equalled or exceeded 2.50 inches in any consecutive 24 hours.—Local time.

December 4th, 1873, 10 P.M. 3d, during night 4th. 2.52 inches.
November 9th, 1879, during A. M. 9th to 8.10 P.M. 9th. 2.75 inches.
December 27th, 1879, 6 A.M. to 6 A.M. December 28th. 2.55 inches.
January 12th, 1882, 3.50 A.M. to 3 A.M. January 13th. 2.94 inches.

Here again, in the matter of fogs, does Southern California show its own peculiarities, for, as Solly says (page 308), owing undoubtedly to local conditions Los Angeles is more subject to fog than San Diego; he gives some statistics showing year by year a greater number of fogs at this inland station than on the coast. Last year Coronado and San Diego had two hundred and ninety-one clear days. Eastern maximum sunshine occurs in the summer,

in Southern California in the winter; again the east has its cloudy weather in the winter, we have ours in the summer.

Number of days with one hour or more of fog, and number of thunder-storms in 10 years. Record began January 1, 1890.

	January	February	March	April	May	June	July	August	September	October	November	December	Sum
Total number of foggy days . . .	17	13	9	15	2	6	4	3	18	22	15	10	116
Average . . .	2	1	1	2	0	1	0	0	2	3	2	1	14
Total number of thunderstorms . .	0	2	1	1	1	0	2	3	0	6	0	1	17
Average . . .	0	0	0	0	0	0	0	0	0	1	0	0	8

As will be seen by the accompanying table, the relative humidity at the coast is about 70 per cent. (72 per cent.); this is over four grains of vapor to each cubic foot of air.

Monthly relative humidity (per cent.) for a period of 31 years. Record began January 1, 1871.

	January	February	March	April	May	June	July	August	September	October	November	December
A. M.	72.9	77.6	81.2	82.2	82.5	84.3	85.9	85.4	84.7	81.3	72.4	75.0
P. M.	73.0	73.5	73.9	73.4	74.8	75.9	76.4	76.4	78.0	76.2	72.8	72.9
Average . . .	73.4	75.6	77.6	77.8	78.6	80.5	81.2	80.9	81.4	78.8	72.6	72.9

Carpenter very aptly remarks that the oft-repeated statement, "driest marine climate," as applied to San Diego, is not sufficiently explained. Why is our humidity so much less than that of Seattle or Santa Barbara, for example? We find the explanation in these two circumstances: Distance from the average storm track and nearness to the desert. Our humidity is as constant as our temperature, and plays a very important part in the excellence of this climate. So long as the temperature is between 55 degrees and 65 degrees (and that is about half the time), the humidity is always 70 per cent. Whenever the temperature increases, the amount of moisture naturally decreases, for the capacity of the air for holding vapor is correspondingly decreased. Strange as it may seem, this is also true of the other extreme in temperature in this desert-sea climate, so the winter cold is a dry cold as well as the summer heat is a dry heat. Solly concisely puts it when he says that, in order to have a general knowledge of the climate of Southern California, we must remember that the coast is cool and moist and the interior hot and dry; "it should be thoroughly understood by the eastern visitor in search of health that if he seeks more days of sunshine and opportunities for outdoor life, with a more equable temperature and an average humidity a little greater than that of New

York or Boston, he can find what he wants at Santa Barbara or San Diego," or Coronado.

The wind movement is moderate, the yearly average is about 5.6 miles per hour. During the day the wind blows from nearly every point of the compass. The coast clearly shows the phenomenon of land and sea breezes as the air, warmed by the earth, rises and creates a draft from the cooler sea, so that by about nine o'clock the breeze commences and increases until about 2 P. M., when it is blowing at about the average rate of 12 miles an hour. At or about sunset this westerly wind dies down, the land cools and a current of air starts toward the warmer sea.

Average hourly wind velocity. Record began January 1, 1873.

	January	February	March	April	May	June	July	August	September	October	November	December
A. M., 1 . . .	3.8	4.0	3.7	3.6	3.5	3.1	2.7	2.5	2.6	2.7	3.1	3.6
2 . . .	3.8	4.1	3.8	3.6	3.4	3.1	2.5	2.3	2.6	2.7	3.2	3.8
3 . . .	3.8	3.9	3.8	3.6	3.4	3.0	2.4	2.2	2.6	2.9	3.3	3.9
4 . . .	3.9	4.0	3.8	3.5	3.4	3.1	2.4	2.3	2.7	2.8	3.2	3.9
5 . . .	4.0	4.1	4.0	3.6	3.4	3.2	2.5	2.3	2.7	2.9	3.4	3.9
6 . . .	4.1	4.1	4.0	3.6	3.5	3.2	2.6	2.4	2.7	2.9	3.5	3.9
7 . . .	3.9	3.9	4.0	3.7	3.6	3.2	2.6	2.3	2.8	2.9	3.4	3.9
8 . . .	3.9	4.1	4.0	3.7	3.4	3.2	2.7	2.4	2.7	3.2	3.5	3.8
9 . . .	3.9	4.1	4.0	3.7	3.3	3.2	2.8	2.5	2.8	3.1	3.6	3.9
10 . . .	4.0	4.2	3.8	3.5	3.6	3.4	3.1	2.6	2.8	3.0	3.5	4.0
11 . . .	3.7	4.0	3.7	3.9	4.3	4.1	4.0	3.4	3.2	3.0	3.1	3.9
Noon, 12 . . .	3.3	3.8	4.3	4.8	5.6	5.6	5.7	5.0	4.6	3.8	3.1	3.4
P. M. 1 . . .	3.5	4.7	5.6	7.0	7.8	7.7	7.7	7.1	6.7	5.5	4.4	3.9
2 . . .	4.5	5.9	7.0	8.7	9.0	9.2	9.1	8.9	8.7	7.4	5.8	4.9
3 . . .	5.9	7.5	8.5	9.9	10.0	10.0	10.1	9.9	10.0	9.0	7.4	6.4
4 . . .	7.3	8.8	9.5	10.5	10.5	10.5	10.3	10.2	10.5	9.6	8.7	7.6
5 . . .	8.0	9.6	10.0	10.6	10.5	10.5	10.3	10.2	10.4	9.8	9.1	8.3
6 . . .	8.3	9.7	9.9	10.3	10.3	10.1	10.0	9.8	9.9	9.4	8.7	8.0
7 . . .	8.1	9.2	9.4	9.6	9.6	9.4	9.3	9.2	9.0	8.4	7.6	7.0
8 . . .	6.7	8.0	8.5	8.7	8.8	8.6	8.4	8.3	8.0	6.8	5.7	5.5
9 . . .	4.9	6.1	6.9	7.4	7.5	7.4	7.5	8.3	6.3	4.8	3.9	4.3
10 . . .	4.0	4.6	5.1	5.7	6.1	6.0	6.1	7.1	4.8	3.5	3.2	3.8
11 . . .	3.8	4.0	4.1	4.5	4.9	4.9	4.7	5.4	3.6	3.0	3.1	3.8
Midnight, 12 .	3.8	4.0	3.8	3.8	4.0	3.8	3.6	4.1	3.0	2.6	3.1	3.8
Average . . .	4.8	5.4	5.5	5.9	6.0	5.8	5.5	5.4	5.2	4.8	4.6	4.7

Total number of high winds in 31 years. Record began January 1, 1873.

	January	February	March	April	May	June	July	August	September	October	November	December	Annual Average
Velocity 25 to 30 miles	8	8	11	8	3	0	3	1	1	4	5	11	2
Velocity 21 to 40 miles	11	8	6	3	0	0	0	0	0	1	2	4	1

Highest Wind Velocity, direction and date for each month, during the past 29 years. Record began January 1, 1873.

MONTHS	Velocity	Direction	Day and Year
January	37	*	* 1873
February	40	nw.	* 1878
March	37	*	* 1876
April	39	*	* 1877
May	28	*	* 1877
June	24	sw.	11, 1886
July	30	nw.	2, 1881
August	25	sw.	3, 1900
September	28	nw.	7, 1881
October	32	nw.	29, 1877
November	32	nw.	112, 1877
December	36	nw.	§ 2, 1887

* Direction and date missing. † Also on November 21, 1886. § Also west, on December 23, 1888.

As I have said elsewhere¹, a great deal that is misleading has been written about the climate of Southern California. Its charms have been exaggerated and its drawbacks either passed over in silence or painted in glowing and attractive colors. The simple truth about California of the south is quite good enough. It is a fact that here is to be found the best yearly climate in the world. Other localities have as good or perhaps a better climate than ours at their best, but certainly none of them have this happy condition the year round as we do on the coast.

A striking peculiarity, and one leading to much confusion, is the great diversity of climate in this country and the different climatic conditions found in even one day's journey.

At the lower stations the various climates all have the peculiar charm of California's equability. This equability is most remarkable. In San Diego, from 1875 to 1901, 9861 days, there were 9545 days of temperature not above 80 degrees nor below 40 degrees.

Newcomers are often bewildered by the many varieties of climate and make statements to far-away friends that add chaos to confusion in the minds of eastern people. One traveler reports California all sunshine and flowers, another all fog and cold. Some complain of the dry desert winds with their exciting electrical conditions, while others dwell upon the excessive humidity, when the probable truth is that the critic has not selected the proper environment and has passed by what he is seeking, which is no doubt within a few short miles.

There is little seasonal change in the extreme southern part of the State. I am accustomed to say to inquirers that our winters resemble September and October in the middle Atlantic States and that our summers are like April and May in the same

region. The dividing line between summer and winter is more imaginary than real.

The greatest change in temperature occurs at night, more marked in the interior than on the coast. Solly says that it is a point worth noting that, even when the atmosphere has been fairly dry from 11 A. M. to 5 P. M., it is always damp at night. This he has noted at Redlands, one of the most favorably situated of the inland towns.

I wish to call particular attention to the apparent difference between sunshine and shade and midday and midnight. This change is more a subjective sensation than a reality and is true of all semitropical localities. It is less marked in California than in Italy, but it always appeals strongly to the newcomer, who is surprised at the immediate sense of chill when he enters the shade from the direct rays of the sun.

As the night advances, the temperature decreases, and while this change may not cause the mercury to fall many degrees, still it is very noticeable to the individual. This is less marked on the coast in summer and more so at all seasons in the interior.

The weather records, says Solly (page 313), "are not so complete for the night as for the day, but they are sufficiently so to establish the fact that, in spite of the great amount of sunshine during the day in California, the foggy and damp nights and mornings take up a great part of the twenty-four hours, so that in California, as in the Riviera, the night air is usually damp and frequently saturated with fog."

This same writer continues to say that to those, to whom the presence of dry air is not important, California offers many attractions from Monterey to Coronado, and he concludes that it can be said that the coast climate is delightful, equable and healthful.

The days are characterized by a constant sea breeze which blows with astonishing regularity; it is rarely too warm for comfort, like the days at Cape May, Atlantic City, Long Branch or other popular Atlantic coast resorts. Several times during the year the so-called desert spells occur. This is when the land breeze or wind from the desert, many miles in the interior, gains ascendancy over the prevailing western or ocean breeze. During this time the thermometer is apt to show a very high registration. Under these conditions I have seen it at San Diego register 98° F., for only a few hours, however, and in the interior reach 110° or 112° F.

The "desert wind" lasts usually only two or three days, but it is extremely disagreeable and exciting, owing to its absolute dryness and peculiar electrical conditions. The nights during this unusual rise in temperature are always cool and pleasant; one never experiences the sleepless, tossing nights of the humid east. These are the only evenings on the coast upon which one may sit out of doors with entire comfort and without sensation of chill; this evening chill is one of the peculiarities of our climate and is somewhat disappointing to the newcomer.

With this rather brief outline of the main geographical and climatic peculiarities of Littoral California let us, again briefly, consider the class of pa-

1. Two Health Seekers in Southern California, Edwards & Harraden. J. B. Lippincott Co., Philadelphia.

tients who will probably be benefited by a residence in this locality. When the existence of phthisis is recognized early and the patient is immediately sent to a proper climate, I see often most remarkable restorations to health; a class of people who will derive much benefit here are those in whom it is impossible to demonstrate the existence of actual disease of the lung (latent and larval tuberculosis), but who are weak, ill-nourished, take cold easily, are subject to attacks of winter cough and bronchitis and whose family-history points strongly to the ultimate consumptive breakdown. These and the early or incipient consumptive should come prepared to remain at least two years—five would be better—and they must be able to procure everything that aids in the promotion and maintenance of the general health. It is madness to come to California in search of health without ample means to supply all comforts and luxuries.

There is usually an early gain in weight and an amelioration of all symptoms; however, if this gain does not at once occur one must not conclude that one is immediately to change location and seek a new climate. Nor is one to sit down in a porch

rocker on reaching the selected locality and wait for a miraculous climatic cure. Here, as in all other relations in life, little is to be gained without labor. The climate unaided will produce little, if any benefit at all.

The only aids which in my hands have produced happy results in restoring health are good food and out-of-door life; I do not mean by this a few hours in an easy-chair on the porch, but an out-of-door existence, in many cases for the entire twenty-four hours. Those who come early enough, remain long enough and lead this life, are almost certain to find what they seek. I have records of too many cases of complete and partial recovery under these circumstances, not to speak very positively on the matter and to feel absolutely sure of my statements. Many of these health-seekers have become my intimate personal friends, whom I see day by day and whose maladies are cured, arrested or quiescent.

It is, of course, understood that we consider the coast of California suitable for only a minority of tubercular cases; the majority will do best in cool, high, dry climates, but to those, to whom a fairly warm, moist climate is suitable, the improvement

CLIMATOLOGY OF SAN DIEGO, CALIFORNIA.

By FORD A. CARPENTER, Observer, Weather Bureau.

Monthly mean temperatures for a period of fifty-two years.

Year.	January	February	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Annual
1852	58.1	55.9	55.0	57.6	61.2	67.1	73.2	72.5	73.6	65.0	57.3	51.9	62.0
1853	58.8	58.0	57.7	62.6	68.3	68.4	72.8	72.9	70.7	68.8	60.4	56.2	63.4
1854	54.2	55.0	56.4	63.3	60.7	64.1	73.1	72.1	66.7	64.0	58.7	55.5	62.0
1855	52.6	56.2	58.4	62.3	64.0	68.8	70.9	72.0	68.3	66.6	56.4	52.4	62.4
1856	51.0	53.5	56.2	60.0	61.0	68.6	72.3	72.5	68.8	61.6	56.2	50.0	61.0
1857	52.4	53.6	58.8	62.6	64.4	69.1	67.3	72.8	68.4	68.9	57.2	51.8	61.9
1858	51.2	56.0	55.1	57.8	62.8	66.5	69.2	69.8	69.6	63.5	58.6	53.1	61.1
1859	54.5	54.8	55.3	56.2	60.1	67.0	69.7	68.4	66.6	65.1	60.1	55.3	61.1
1860	51.4	53.9	59.0	60.4	61.9	64.5	68.8	70.8	69.1	63.6	56.9	55.2	61.3
1861	51.4	56.5	57.7	63.8	65.7	67.6	73.1	72.3	69.3	64.6	59.8	58.1	63.3
1862	55.6	51.8	56.8	59.4	62.7	68.2	71.2	72.9	69.4	65.8	60.4	55.4	62.5
1863	52.8	52.8	59.9	61.0	62.6	64.6	68.0	68.1	68.9	65.7	59.0	55.8	61.6
1864	56.0	56.2	58.5	61.8	65.2	69.0	69.7	75.1	69.2	64.6	59.1	56.5	63.4
1865	55.6	54.7	57.8	59.8	64.3	65.7	67.7	71.8	68.2	65.2	62.1	52.2	62.1
1866	54.5	57.0	57.9	62.7	60.5	66.6	69.7	73.1	69.6	65.0	60.4	58.6	63.0
1867	55.2	53.2	55.4	61.7	63.6	69.1	70.5	74.5	71.7	64.0	63.2	63.3	63.8
1868	54.5	56.5	57.4	61.3	62.3	65.7	69.4	74.1	72.2	66.1	62.1	55.4	63.1
1869	56.6	55.6	59.8	62.1	62.2	64.4	68.8	70.3	68.3	66.3	61.1	50.6	62.2
1870	55.6	57.5	56.3	58.8	61.4	64.6	68.3	70.5	66.9	63.6	59.4	51.4	61.2
1871	53.5	52.2	56.7	57.7	63.6	65.1	71.4	72.1	68.3	65.6	58.3	56.8	61.8
1872	52.7	55.2	56.4	56.0	60.4	64.9	66.6	68.9	66.0	62.5	59.4	55.4	60.4
1873	56.7	53.3	56.7	58.0	60.0	62.7	67.0	69.0	67.7	62.0	60.3	54.3	60.0
1874	54.7	52.6	52.6	56.2	60.5	63.2	68.3	68.1	65.7	63.2	56.7	53.3	59.6
1875	53.4	54.6	55.0	57.8	62.6	64.6	68.3	71.2	67.7	67.2	60.3	56.9	61.6
1876	51.9	55.9	54.9	59.0	60.9	65.2	68.3	68.8	66.3	64.6	59.4	56.8	61.0
1877	57.4	57.9	58.9	58.3	60.3	66.3	68.4	68.4	68.0	63.9	60.6	56.8	62.1
1878	55.6	56.0	56.7	58.1	61.5	64.1	66.8	68.3	67.3	62.0	57.5	53.5	60.6
1879	52.3	54.8	57.9	53.1	60.1	64.1	65.7	68.6	66.6	62.6	56.2	53.9	60.1
1880	52.5	50.8	52.1	56.5	60.6	63.0	63.4	65.8	63.1	61.2	56.2	56.9	58.5
1881	52.8	55.7	54.3	60.8	62.3	64.1	67.2	68.2	66.7	61.5	56.8	55.0	60.4
1882	50.4	51.2	55.1	56.6	61.9	64.3	66.7	70.2	66.8	62.0	57.0	55.7	59.8
1883	53.4	53.9	57.4	57.4	60.6	66.6	68.7	68.9	69.7	61.7	58.7	57.5	61.2
1884	55.0	55.9	56.5	57.6	61.4	64.4	68.4	69.5	65.1	61.3	58.6	54.4	60.7
1885	54.0	55.4	56.6	62.0	63.3	64.3	67.6	71.8	68.0	63.9	59.7	57.1	62.2
1886	55.9	58.5	55.0	57.2	60.4	68.1	67.1	70.5	66.6	59.7	56.0	56.0	60.5
1887	54.3	52.9	57.2	59.0	62.1	64.6	66.5	66.2	65.7	64.5	59.2	54.6	60.6
1888	51.6	54.9	55.8	60.8	61.2	66.0	68.4	69.2	69.7	65.0	59.9	58.2	61.7
1889	54.8	58.0	59.2	60.4	60.8	64.0	67.6	70.8	70.2	65.4	62.0	57.4	62.6
1890	51.0	54.3	56.4	58.6	60.4	64.1	68.5	69.8	69.1	64.6	63.8	60.8	61.8
1891	54.6	58.3	56.9	58.2	60.8	65.6	69.9	72.4	70.2	63.8	59.2	61.5	62.0
1892	55.1	55.0	56.0	57.8	61.0	62.0	64.9	67.8	65.4	62.7	60.9	54.2	60.2
1893	57.4	54.4	54.2	57.5	61.0	63.4	67.4	70.0	64.6	62.7	57.6	57.4	60.6
1894	49.5	50.5	52.6	56.4	58.6	61.4	64.8	67.0	65.9	62.8	57.1	54.8	58.4
1895	53.2	55.8	55.4	57.8	61.9	65.0	65.6	61.7	67.4	64.4	59.4	55.0	60.5
1896	55.5	57.7	58.2	56.5	62.0	64.8	68.6	69.4	66.7	64.2	59.7	59.0	61.9
1897	55.8	54.7	54.2	59.8	60.9	63.4	67.0	69.9	68.1	62.4	60.2	55.0	61.0
1898	50.8	55.2	54.5	59.1	58.8	63.8	66.7	70.6	68.5	62.3	59.4	56.6	60.5
1899	55.5	53.4	56.4	58.2	57.7	61.4	65.6	65.8	65.5	62.7	60.8	58.7	60.1
1900	57.8	57.6	59.2	56.8	60.9	64.4	67.6	66.2	65.6	63.1	64.6	60.4	62.0
1901	56.2	57.5	60.0	57.4	60.0	62.5	65.6	68.2	64.8	62.8	60.8	57.8	61.2
1902	56.4	54.8	54.8	57.2	60.2	62.2							
Mean	53.9	54.8	56.5	59.1	61.5	65.1	68.4	70.0	67.9	63.9	59.2	55.7	61.3

Monthly, seasonal and annual precipitation at San Diego, California.

YEAR.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Annual	Season of	Seasonal
1850	0.00	1.13	1.00	0.09	0.00	0.68	0.00	0.00	0.00	0.19	2.82	1.93	7.84	1849-50	
1851	0.03	1.51	0.34	0.87	0.71	0.01	0.00	0.00	0.02	0.01	0.25	3.74	7.49	1850-51	8.41
1852	0.58	1.84	1.87	0.85	0.32	0.00	0.00	0.40	0.00	0.06	1.45	4.50	11.87	1851-52	9.88
1853	0.50	0.20	1.52	0.25	2.10	0.05	0.00	0.21	0.00	0.00	1.28	1.77	7.88	1852-53	10.85
1854	0.99	2.56	1.88	0.89	0.18	0.01	0.07	1.36	0.09	0.27	0.04	3.29	11.63	1853-54	10.99
1855	1.97	3.59	1.30	1.52	0.06	0.00	0.00	0.04	0.00	0.11	2.15	0.41	11.15	1854-55	12.17
1856	1.27	1.86	1.59	2.17	0.29	0.00	0.00	0.00	0.07	0.00	1.22	1.30	9.77	1855-56	9.85
1857	0.26	1.76	0.00	0.04	0.09	0.03	0.00	0.02	0.01	0.49	2.16	1.30	6.15	1856-57	4.78
1858	1.52	0.44	1.24	0.17	0.00	0.19	0.00	0.04	0.10	0.47	0.28	3.10	7.55	1857-58	7.56
1859	0.00	1.89	0.20	0.36	0.17	0.00	0.02	0.00	0.00	0.18	1.49	1.79	6.10	1858-59	6.59
1860	0.72	1.49	0.15	0.65	0.04	0.05	0.14	0.00	0.00	0.00	2.88	2.99	9.11	1859-60	6.70
1861	0.82	0.79	0.05	0.04	0.00	0.19	0.00	0.00	1.59	0.05	1.19	3.20	7.92	1860-61	7.76
1862	5.56	1.39	0.97	1.05	0.16	0.48	0.11	0.00	0.00	0.89	0.05	0.93	11.59	1861-62	15.75
1863	0.32	1.09	0.32	0.13	0.02	0.00	0.00	0.00	0.36	0.00	0.73	0.04	3.02	1862-63	3.76
1864	0.04	2.50	0.20	0.01	1.25	0.01	0.11	0.00	0.00	0.04	2.41	1.04	7.61	1863-64	5.25
1865	1.28	3.00	0.00	0.56	0.00	0.07	1.29	0.00	0.00	0.02	0.52	0.84	7.52	1864-65	9.63
1866	5.05	3.43	1.47	0.11	0.09	0.00	0.00	0.10	0.00	0.00	0.24	1.82	12.31	1865-66	11.63
1867	2.32	0.85	7.88	0.48	0.04	0.00	0.00	0.30	0.00	0.34	0.45	3.06	15.72	1866-67	13.93
1868	3.37	1.63	0.73	1.20	0.15	0.00	0.51	0.00	0.05	0.00	2.00	1.52	11.16	1867-68	11.44
1869	2.88	1.88	1.98	0.53	0.33	0.00	0.05	0.00	0.00	0.05	2.32	0.94	10.96	1868-69	11.22
1870	0.54	0.77	0.33	0.20	0.28	0.00	0.04	0.07	0.00	1.54	0.18	0.42	4.37	1869-70	5.54
1871	0.52	1.35	0.01	0.70	0.34	0.00	0.00	0.00	0.00	0.00	1.33	1.39	5.64	1870-71	5.06
1872	0.99	2.63	0.46	0.26	0.12	0.00	0.00	1.18	0.00	0.00	0.00	1.40	6.04	1871-72	7.36
1873	0.44	4.15	0.11	0.10	0.03	0.00	0.00	1.95	0.00	0.00	0.77	5.46	13.01	1872-73	8.18
1874	3.11	3.73	1.20	0.34	0.34	0.00	0.12	0.00	0.11	0.53	0.88	0.55	10.91	1873-74	15.07
1875	2.38	0.37	0.45	0.12	0.20	0.02	0.00	0.21	0.39	0.00	2.25	0.41	6.80	1874-75	5.82
1876	2.47	2.44	1.78	0.06	0.05	0.05	0.03	0.06	0.03	0.08	0.04	0.15	7.24	1875-76	9.99
1877	1.05	0.18	1.44	0.26	0.43	0.00	0.00	0.00	0.00	0.81	0.06	3.89	8.12	1876-77	3.66
1878	1.45	4.83	1.41	2.91	0.58	0.16	0.00	0.00	0.00	0.96	0.00	1.57	13.87	1877-78	16.10
1879	3.54	1.04	0.10	0.60	T	0.07	0.00	0.00	0.00	0.29	2.77	6.30	14.71	1878-79	7.88
1880	0.61	1.50	1.43	1.34	0.06	0.06	0.09	0.32	0.00	0.53	0.28	4.15	10.37	1879-80	14.77
1881	0.52	0.55	1.88	1.35	0.04	0.05	0.00	0.01	0.04	0.24	0.12	0.30	5.00	1880-81	9.26
1882	4.53	2.55	1.02	0.45	0.18	0.07	0.00	T	0.01	0.41	0.39	0.13	9.74	1881-82	9.50
1883	1.09	0.95	0.41	0.31	1.14	0.08	0.00	0.00	0.00	2.01	0.20	1.82	8.01	1882-83	4.92
1884	1.34	9.05	6.23	2.84	2.17	0.31	0.00	T	0.07	0.35	0.11	5.12	27.59	1883-84	25.97
1885	0.35	0.02	0.78	1.20	0.61	0.06	T	0.13	T	0.31	1.56	0.71	5.73	1884-85	8.80
1886	6.95	1.51	3.73	1.95	0.04	0.07	T	T	0.00	0.05	0.95	0.10	15.35	1885-86	16.83
1887	0.04	4.51	0.02	2.14	0.47	0.04	0.01	T	T	T	2.08	1.14	10.45	1886-87	8.13
1888	1.96	1.48	2.79	0.10	0.22	0.04	0.01	T	0.04	0.26	1.83	2.84	11.57	1887-88	9.82
1889	1.72	1.80	2.20	0.19	0.03	0.10	T	0.04	T	2.12	0.12	7.71	16.03	1888-89	11.05
1890	2.79	1.70	0.41	0.05	0.08	0.00	0.00	T	0.65	0.01	0.72	1.61	8.02	1889-90	14.18
1891	1.21	4.84	0.27	0.76	0.35	0.05	T	0.00	0.08	0.04	T	1.29	8.99	1890-91	10.47
1892	1.58	2.96	0.96	0.41	1.15	0.13	0.00	0.05	T	0.22	0.94	0.69	9.09	1891-92	8.65
1893	0.78	0.47	5.50	0.22	0.39	T	T	0.00	0.00	0.11	0.91	1.91	10.29	1892-93	9.21
1894	0.29	0.49	1.05	0.11	0.09	0.01	0.00	0.04	0.01	T	0.00	2.26	4.35	1893-94	5.01
1895	7.33	0.53	1.43	0.11	0.19	0.00	0.00	0.00	0.01	0.27	1.19	0.27	11.33	1894-95	11.86
1896	1.27	0.02	2.89	0.25	0.03	0.01	T	0.13	T	0.97	0.98	2.18	8.73	1895-96	6.34
1897	3.13	2.72	1.53	0.02	0.12	T	0.01	T	T	1.06	0.02	0.32	8.93	1896-97	11.66
1898	1.71	0.06	0.91	0.22	0.66	0.02	0.00	0.00	0.07	0.00	0.15	0.87	4.67	1897-98	4.98
1899	2.34	0.30	0.85	0.29	0.10	0.27	0.00	0.07	0.00	0.35	0.86	0.65	6.08	1898-99	5.31
1900	0.69	0.03	0.53	1.26	1.45	0.08	0.00	T	T	0.30	1.43	0.00	5.77	1899-00	5.90
1901	2.08	4.77	1.07	0.01	0.77	0.02	T	T	0.06	0.28	0.41	0.02	9.49	1900-01	10.45
1902	1.70	1.57	1.86	0.21	0.06	T								1901-02	6.22
General Average	1.75	1.88	1.37	0.64	0.34	0.07	0.05	0.10	0.07	0.33	0.95	1.96	9.54		9.55

here will be marked, continuous and satisfactory. I wish, however, to say that I fully endorse the statement of Solly, "The majority of consumptives do better, other things being equal, the further they are removed from the sea, and that they do better in high than in low altitudes, wherever situated."

Scrofulous affections, enlarged glands, the soft, flabby muscles of the strumous individual and the lymphatic or adenoid child receive a marked benefit from long residence on the coast, combined with sea bathing. During a large portion of the year these baths may be taken in the open air directly in the sea or bay, at other times the very pleasant and attractive bath-houses may be resorted to. There is, I think, a general consensus of opinion in regard to the efficacy of a mild, equable seaside resort with outdoor life and sea bathing for the scrofulous and for cases of very early tuberculosis. The sea air itself, independent of the bathing, seems to be curative.

Those affected with tuberculous disease of the bones can live in the open air, even if confined to bed, or to the use of the various surgical appliances for rest of the parts or correction or modification of deformities. The little sufferers from Pott's disease

may be carried out of doors on their cots in the early morning and not be brought into the house until afternoon, an inestimable blessing.

Renal disease will be markedly benefited by a residence in this climate; in the *Climatologist*, some years ago, I said that a residence in a suitable locality, while it will not, of course, cure well-marked kidney disease, will at least prolong life to a degree far beyond the natural expectancy. The constant skin activity, much of which is manifested as insensible perspiration, lowers arterial tension and depletes in a most beneficial manner, relieving the overtaxed renal circulation and the diseased parenchyma. From sea-level to 2000 feet we can promise the patient suffering from chronic renal disorder marked prolongation of life in comparative comfort; and, if the change be made soon enough, when the connective tissue is yet embryonic, it is but reasonable to suppose that, with decreased tension and active skin, freedom from intercurrent renal congestion and a constant outdoor life, the disease may be arrested or removed.

Wilson and Loomis, in their paper read before this Society in 1889, state that there is reason to believe that low temperature, rapid change of temperature

Maximum and minimum temperatures for a period of 31 years.

YEAR.	January		February		March		April		May		June		July		August		Sept.		October		Nov.		Dec.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1872	73	37	68	44	71	44	74	43	83	52	80	55	75	58	86	60	80	54	87	45	81	42	72	40
1873	75	44	77	37	72	40	82	42	78	52	75	58	77	60	78	63	82	55	76	49	85	49	68	44
1874	71	42	64	41	63	41	71	43	74	50	76	52	79	59	83	56	78	54	90	46	75	45	82	39
1875	68	42	70	44	71	39	77	39	82	50	77	53	79	61	83	63	88	57	88	53	78	50	75	38
1876	65	39	77	39	75	43	87	43	76	50	88	51	78	60	81	60	82	54	80	48	79	43	77	43
1877	78	42	75	45	70	48	67	44	68	51	94	55	86	59	82	58	91	58	73	47	78	46	78	40
1878	68	38	69	44	68	42	77	44	73	48	76	51	77	56	80	55	100	53	87	44	77	40	79	35
1879	76	55	74	38	99	44	82	45	94	47	93	52	75	58	81	54	92	54	92	46	79	43	71	32
1880	73	32	63	35	69	38	80	42	84	46	73	52	73	54	84	56	82	50	81	48	78	40	77	40
1881	70	36	82	39	72	40	82	51	72	51	76	53	80	57	82	56	86	52	72	46	76	38	77	39
1882	64	34	70	37	79	39	70	43	73	48	75	55	78	57	83	62	80	50	81	49	80	42	78	41
1883	76	32	83	36	71	48	85	42	89	45	84	56	80	59	84	60	101	59	80	48	82	42	78	42
1884	78	39	79	38	68	43	69	45	72	47	81	50	84	54	92	54	78	51	87	47	74	42	68	36
1885	68	38	76	40	81	42	83	47	73	52	74	52	82	58	89	62	90	56	88	47	76	42	79	40
1886	74	35	80	44	68	41	71	45	72	50	75	54	81	57	82	61	78	60	75	47	77	40	76	40
1887	74	38	76	38	82	44	80	44	79	48	78	54	79	60	77	54	79	58	85	50	82	44	74	36
1888	64	33	67	42	72	41	93	47	70	52	76	54	77	55	82	57	82	58	80	53	75	46	73	44
1889	78	36	85	37	80	45	83	47	80	50	72	56	84	59	89	62	91	54	80	52	83	46	69	40
1890	66	35	77	38	74	41	85	45	75	46	93	51	80	56	89	58	83	60	90	49	91	46	79	47
1891	76	35	70	34	76	41	77	44	67	53	78	53	88	58	85	60	89	55	84	50	82	44	72	32
1892	75	38	68	42	73	44	80	41	87	47	75	51	75	57	80	57	80	54	83	46	84	40	71	36
1893	80	38	75	40	75	40	78	43	88	49	75	53	79	57	81	59	77	53	88	50	83	40	82	38
1894	69	32	69	34	72	36	83	43	72	45	73	50	77	57	90	55	90	52	87	45	78	45	70	41
1895	77	36	82	39	74	38	81	44	80	51	77	51	74	57	78	54	90	54	84	54	85	38	79	34
1896	77	39	83	39	85	41	74	42	98	48	89	54	80	56	88	59	80	54	79	52	76	43	76	46
1897	73	40	76	38	70	40	88	46	67	50	70	54	79	59	89	60	83	58	76	51	83	45	80	36
1898	78	36	75	42	77	38	86	45	69	51	88	54	77	60	83	63	91	56	81	51	76	43	79	43
1899	74	43	76	34	86	44	93	46	66	48	70	55	78	57	76	58	92	55	93	48	81	50	80	46
1900	79	46	76	45	80	46	67	45	75	49	87	56	84	60	80	59	87	53	72	50	89	51	79	44
1901	75	40	83	44	82	47	66	46	67	51	86	53	74	57	79	58	72	56	96	51	80	49	76	35
1902	81	36	71	39	76	43	69	47	78	50	76	52												

Temperature and weather summaries for a period of fifty-two years.

Temperature.	Jan.	Feb.	Mar.	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Annual.
Highest monthly mean and year	57.8 1900	58.5 1886	60.0 1901	63.8 1861	65.7 1861	69.1 1857-67	73.2 1852	75.1 1864	73.6 1852	68.8 1853	64.6 1900	63.8 1867	63.8 1867
Lowest monthly mean and year	49.5 1895	50.5 1894	52.1 1880	56.0 1872	57.7 2899	61.4 1894-99	63.4 1880	65.8 1880-99	63.1 1880	59.7 1886	56.0 1886	50.0 1856	58.4 1894
Absolute maximum and date	81 4, 1902	85 12, 1889	99 27, 1879	93 12, 1888	98 25, 1896	94 10, 1877	88 25, 1891	92 15, 1884	101 22, 1883	96 21, 1901	91 4, 1890	82 6, 1874	101 Sept. 22, 1888
Absolute minimum and date	32 *31, 1880	34 10-11 '94	38 6, 1880	39 7, 1875	39 7, 1875	50 13, 1894	54 16, 1894	54 29, 1879	50 18, 1882	44 30, 1878	38 8, 1881	82 24, 1895	82 Jan. 31, 1880 Dec. 25, 1879
Greatest daily range	35	37	43	40	36	35	22	28	35	37	34	40	43
Mean daily range	16.9	13.7	14.2	14.2	12.2	12.1	11.6	11.4	13.0	14.1	17.7	16.2	13.9
Mean variability	2.4	2.1	2.3	2.2	1.6	1.6	1.7	1.7	2.0	1.8	2.3	1.9	2.0
Mean of three consecutive warmest days	65.7	69.2	71.3	74.3	72.1	75.8	78.0	81.1	82.9	79.0	75.6	75.6	82.9
Mean of three consecutive coldest days	40.2	41.9	44.3	50.5	52.6	55.4	59.5	60.8	57.0	49.8	44.9	42.8	40.2
WEATHER													
Average number of clear days	17	14	11	13	9	8	14	12	16	18	19	17	178
Average number of partly cloudy days	7	9	10	10	11	13	11	15	11	10	9	10	116
Average number of cloudy days	7	5	10	7	11	9	6	4	3	3	2	4	71
Average number of rainy days	6	8	7	4	3	1	0	0	0	2	3	5	39

* Also 21st, 1883; 7th, 1894.

and high altitudes are unfavorable, whereas equability and warmth are favorable influences.

Those affected with the various urinary diatheses, so-called, and other troubles of kindred nature will find help in prolonged residence here; cystitis, so often an attendant on advanced years and so apt to be aggravated by damp, changeable weather, will be markedly benefited by the warm, equable coast climate. Insomnia in the young or old will find relief in the same region.

I have elsewhere said that advancing years and old age may be robbed of many concomitant infirmities by residence in this locality; they cannot with impunity change from a low to a high altitude, more particularly if they suffer from chronic pulmonary

disease, bronchitis, bronchiectasis, fibroid phthisis or the like. A dilated fatty heart is safer at sea-level. On the whole, a marine climate is preferable for old people and, if it be warm and equable, so much the better.

This country is a veritable paradise for the growing child. There is no period during the entire year when it is necessary to house the little ones. There are no badly ventilated, overcrowded or overheated rooms. The zymotic diseases are usually not at all prevalent. They are mild, run a very favorable course and are generally followed by complete recovery. The scrofulous child lives under the most favorable conditions to combat the inherited taint.

